



INSPECTOR GENERAL  
DEPARTMENT OF DEFENSE  
400 ARMY NAVY DRIVE  
ARLINGTON, VIRGINIA 22202

REPORT  
NO. 91-008

November 2, 1990

MEMORANDUM FOR ASSISTANT SECRETARY OF THE ARMY (FINANCIAL  
MANAGEMENT)

SUBJECT: Quick-Reaction Report on Contracting Procedures for  
the Hot Metal Plus Plume Suppression System Used on  
the AH-1 Cobra Helicopter (Project No. OAL-8004.01)

Introduction

During our audit of Suppression Systems Used on the AH-1 Helicopter and OV-10 Aircraft, and the AN/ALQ-144 Infrared Jammer, we made a limited review of contracting procedures as a part of our overall objective, which was to evaluate the design adequacy of the systems. We reviewed modification P00010 of contract no. DAAJ09-87-C-1196 for production of the Hot Metal Plus Plume Suppression system to determine the nature and extent of efforts made to improve the suppressor's reliability. The Army awarded modification P00010 to Hayes Targets, Leeds, Alabama, on December 5, 1989. The modification incorporated two value engineering changes: a replaceable nosecone and strut reinforcements. This report discusses the propriety of approving the value engineering change proposal and the appropriateness of sharing the projected savings with the contractor. Hayes projected that life-cycle operation and maintenance costs would be reduced by \$10 million if the Army implemented the two value engineering changes. Hayes' estimated share of the \$10 million savings is \$5 million. In an August 16, 1990 memorandum (Enclosure 1), we requested that the Army suspend further negotiations pending issuance of this report. We determined that the Army had paid for development of the proposed changes in 1985, 2 years before it awarded the contract to Hayes Targets; therefore, Hayes is not entitled to benefit from the savings generated by the changes. Further, responsible Army personnel were aware that the improvements proposed by Hayes Targets had already been implemented and were undergoing test and evaluation, but the COBRA helicopter Project Management Office made a management decision to approve the value engineering change proposals. Payments based on projected savings relating to the value engineering changes would be inappropriate and would improperly compensate Hayes Targets. Your immediate attention is required to ensure that action is taken to preclude payments to the contractor for the claimed savings.

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### Background

The Hot Metal Plus Plume Suppression system was designed to protect the AH-1 helicopter from infrared missiles by reducing the heat signature of the aircraft's engine exhaust. The system does this by recirculating and cooling exhaust gases before the gases are released into the atmosphere. The Army Aviation Systems Command awarded an initial \$1.19 million contract for the suppressors to Garrett AiResearch Manufacturing on December 14, 1976. During the first article test, the Garrett suppressor was unable to meet the required minimum reliability of 300 hours meantime between failures. The Army felt it could improve the suppressor's reliability through product improvements concurrent with production and waived the reliability requirement of the first article acceptance test. On December 10, 1981, the Army awarded Garrett contract no. DAAK50-82-C-0014 to develop reliability improvements, which specifically addressed redesign of the suppressor unit to include a detachable nosecone and stronger support struts. In 1985, Garrett fabricated a prototype suppressor that incorporated the replaceable nosecone and strut reinforcement changes. The Army Aviation Systems Command awarded the \$3.4 million follow-on contract for the suppressors to Hayes Targets on June 30, 1987. The prototype suppressor was being evaluated at the time of the follow-on contract award, so the changes were not incorporated into the follow-on contract. As of September 1990, Hayes Targets was producing the suppressor.

### Discussion

The intent of the value engineering program is to give contractors an incentive to develop product improvements by allowing contractors to share in acquisition and collateral savings attributable to the adoption of their proposed value engineering improvements. The Federal Acquisition Regulation, subpart 52.248-1, states, "The contractor is encouraged to develop, prepare, and submit value engineering change proposals (VECP's) voluntarily." Also, the Federal Acquisition Regulation, subpart 52.248-1(f), stipulates that the net share of acquisition savings on a fixed-price contract is 50 percent. The contracting officer determines the amount of savings to be shared with the contractor.

We compared the technical drawings prepared in 1982 by Garrett AiResearch, the original producer of the suppressor, with the drawings submitted in 1989 by Hayes Targets as a part of its value engineering change proposal. Hayes' technical drawings were substantially the same in concept, design, and implementation as the drawings that Garrett delivered to the Government in 1982. Moreover, Hayes used the prototype Hot Metal Plus Plume Suppressor that Garrett fabricated in 1985 to estimate the savings expected to result from Hayes' improvements. Also, the Corpus Christi Army Depot has been using the same method of reinforcing struts identified in Hayes' 1989 value engineering change proposal since 1985. The July 13, 1989 minutes of the

Cobra Configuration Control Board disclosed that the Army intended for its depot strut reinforcement procedure to become a part of the value engineering modification. The Board stated that the modification should include a clause stating, "The proposed reinforcement sleeve will be identical to and totally interchangeable with Corpus Christi Army Depot strut reinforcement sleeve, P/N 1560-AH1-283-7."

The award of the value engineering modification to Hayes Targets was improper because the Army had already paid for development of the changes. Accordingly, payment of the \$5 million, 50 percent of the \$10 million potential savings resulting from implementation of the changes, would also be improper. Hayes did not develop the improvements, and it is not equitable that it should benefit from the resultant savings.

#### Recommendation

We recommend that the Commander, U.S. Army Aviation Systems Command, terminate negotiations of the contract modification that would result in paying an estimated \$5 million to Hayes Targets for savings resulting from the value engineering change proposals.

#### Management Comments and Audit Response

On September 25, 1990, we provided a draft of this report to the Assistant Secretary of the Army (Financial Management) for comments. As of October 26, 1990, comments had not been received. Therefore, we are requesting that the Assistant Secretary provide comments to the final report indicating concurrence or nonconcurrence in the findings and recommendation. If you concur, describe the corrective actions taken or planned, the completion dates for actions already taken, and the estimated dates for completion of planned actions. If you nonconcur, please state your specific reasons. If appropriate, you may propose alternative methods for accomplishing desired improvements.

In order for your comments to be considered responsive, you must state concurrence or nonconcurrence with the estimated monetary benefits, identified in Enclosure 2, of \$5 million. If you nonconcur with the estimated monetary benefits or any part thereof, you must state the amount you nonconcur with and the basis for your nonconcurrence. Recommendations and potential monetary benefits are subject to mediation in the event of nonconcurrence or failure to comment. DoD Directive 7650.3 requires that all audit recommendations be resolved promptly. Therefore, we request that the Assistant Secretary comment on the unresolved issues within 15 days of the date of this report.

The courtesies extended to the audit staff are appreciated. If you have any questions regarding this report or need additional information, please contact Mr. Thomas Gimble at (703) 614-1414 (AUTOVON 224-1414) or Mr. Thomas Corkhill at (703) 614-1416 (AUTOVON 224-1416). The audit team members are listed in Enclosure 3. Copies of this report are being distributed to the activities listed in Enclosure 4.

  
Edward R. Jones  
Deputy Assistant Inspector General  
for Auditing

Enclosure

cc:  
Secretary of the Army



INSPECTOR GENERAL  
DEPARTMENT OF DEFENSE  
400 ARMY NAVY DRIVE  
ARLINGTON, VIRGINIA 22202 2884

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MEMORANDUM FOR COMMANDER, U.S. Army Aviation Systems Command  
THROUGH CHIEF OF STAFF, U.S. Army Aviation  
Systems Command

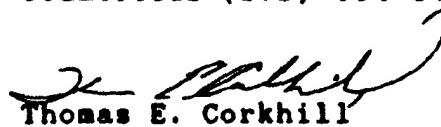
SUBJECT: Award of Value Engineering Change Proposal for  
Modification P0010 to Contract DAAJ09-87-C-1196

During our Audit of Suppression Systems for the AH-1 Helicopter and OV-1 Aircraft, and the AN/ALQ-144 Jammer, issues arose concerning the award of a modification to contract DAAJ09-87-C-1196 with Hayes Targets, Leads, Alabama. Specifically, modification P0010 incorporating VECP-89-5014 and VECP-89-5015 may have been improperly awarded as a value engineering change proposal. We request that the negotiations to determine the value of collateral and acquisition savings due the contractor under this modification be deferred until after we have issued an audit report on the subject.

Modification P0010 was based on two reliability improvement suggestions submitted by Hayes Targets. Our examination of technical drawings and prior system documentation disclosed that Hayes Targets' improvements were conceived as a result of previous Government and another contractor's reliability improvement studies. The drawings that detailed the proposed modifications also appeared to have been derived from earlier Government developed drawings. Therefore, we believe there was no basis for a value engineering change proposal.

On August 9, 1990, we held an in-process briefing with Aviation Systems Command personnel to discuss our concerns. We believe that Hayes Targets' estimated savings of \$10 million is improper and that the contractor is not entitled to remuneration related to savings. Therefore, we request that you immediately direct a stoppage of further action that would commit the Government to payment of any collateral savings on this contract.

If you require further information or have any questions, please call me at AUTOVON 224-1416 or commercial (202) 694-1416.

  
Thomas E. Corkhill  
Project Manager  
Acquisition Management Directorate

cc:  
Director, Procurement and Production, AVSCOM  
ACO, DCMAO Birmingham, AL

- Enclosure 1

SUMMARY OF POTENTIAL MONETARY AND OTHER  
BENEFITS RESULTING FROM AUDIT

<u>Recommendation Reference</u>	<u>Description of Benefit</u>	<u>Amount and/or Type of Benefit</u>
1.	Compliance with Federal Acquisition Regulation, subpart 48.101. Eliminate payment to contractor for improper value engineering savings.	\$5 million could be saved by putting funds to better use.

**AUDIT TEAM MEMBERS**

Donald E. Reed, Director, Acquisition Management Directorate  
Alvin L. Madison, Acting Program Director  
Thomas E. Corkhill, Program Manager  
Joseph K. Alejandro, Team Leader  
Robert L. Shaffer, Team Leader  
Delestta D. McGlone, Auditor  
Wilbur Broadus, Auditor  
Keith A. Yancey, Auditor

FINAL REPORT DISTRIBUTION

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Commander, U.S. Army Aviation Systems Command

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Senate Committee on Armed Services

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House Committee on Armed Services

House Committee on Government Operations

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Committee on Government Operations

## INTERNET DOCUMENT INFORMATION FORM

**A . Report Title:** Quick-Reaction Report on Contracting Procedures for the Hot Metal Plus Plume Suppression System Used on the AH-1 Cobra Helicopter

**B. DATE Report Downloaded From the Internet:** 08/14/00

**C. Report's Point of Contact:** (Name, Organization, Address, Office Symbol, & Ph #): OAIG-AUD (ATTN: AFTS Audit Suggestions)  
Inspector General, Department of Defense  
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**D. Currently Applicable Classification Level:** Unclassified

**E. Distribution Statement A:** Approved for Public Release

**F. The foregoing information was compiled and provided by:**  
**DTIC-OCA, Initials:** VM **Preparation Date** 08/14/00

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